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NOTES FOR A THEORY OF LABOR MARKET  
STRATIFICATION

Michael Joseph Piore

Number 95

October 1972

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NOTES FOR A THEORY OF LABOR MARKET

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This essay is designed to develop a series of concepts which I believe to be helpful in the understanding of socio-economic mobility, and, in particular, the problems associated with such mobility or lack thereof, in the United States during the past decade. This development starts from the dual labor market hypothesis introduced several years ago in an attempt to understand the manpower problems of disadvantaged, particularly black workers, in urban core areas.<sup>1</sup> That hypothesis has proved an attractive way of organizing operating experience in low income labor markets and, for this reason, has attracted adherents among manpower practitioners and academicians oriented toward this community. It has not, however, lent itself readily to the organization and analysis of existing labor market data and has thus tended to frustrate rigorous empirical examination.<sup>2</sup> This essay represents, in part, an attempt to expand and clarify the initial hypothesis with a view toward overcoming these limitations. It is not, however, meant to be limited to that hypothesis alone and, indeed, it is hoped that the concepts developed here will contribute to a more general conceptual apparatus for the analysis of economic mobility.

The essay is divided into three parts. The first part of the essay is an attempt to define the mobility problem and develop the basic conceptual apparatus critical to an understanding of it. This part is in turn divided into three sections. The first of these sections reviews the initial dual labor market hypothesis, broadens that hypothesis to recognize, in addition to the primary and secondary sectors, a division of the primary sector into an upper tier and a lower tier, and links these three segments of the labor market to the sociological distinction between middle class, working class, and lower class subcultures. The second section of the essay proposes the concept of mobility chains and uses this concept to redefine the distinction among the three basic segments

of the labor market. The third section attempts to explain the construction of mobility chains in terms of the process of automatic, incidental learning.

The second part of the essay examines the problem of changing mobility patterns and restructuring mobility chains generally. In the third part, the specified constraints imposed by technology, on the one hand, and the home environment (or the subculture), on the other, are examined.

### Part I. The Basic Concepts:

#### 1. Labor Market Segments

The basic hypothesis of the dual labor market was that the labor market is divided into two essentially distinct segments, termed the primary and the secondary sectors. The former offers jobs with relatively high wages, good working conditions, chances of advancement, equity and due process in the administration of work rules, and, above all, employment stability. Jobs in the secondary sector, by contrast, tend to be low-paying, with poorer working conditions, little chance of advancement; a highly personalized relationship between workers and supervisors which leaves wide latitude for favoritism and is conducive to harsh and capricious work discipline; and with considerable instability in jobs and a high turnover among the labor force. The hypothesis was designed to explain the problems of disadvantaged, particularly black workers, in urban areas, which had previously been diagnosed as one of unemployment. It implied that the basic problem was that they were somehow confined to jobs within the secondary sector, and the reported unemployment rates were essentially

a symptom of the instability of the jobs and the high turnover among the labor force which held them rather than a literal inability to find work. The relative stability of jobs and workers in the two sectors also appeared to be the critical explanatory variable in understanding the origins of the two sectors; and the other characteristics may be viewed as derivative of this one factor.<sup>3</sup>

A broader view of the labor market suggests that the dual labor market hypothesis focuses too narrowly on the problems of disadvantaged workers, and that there are distinctions between primary jobs which are in many ways as important as the distinction between the primary and the secondary sectors. At the very least, it seems useful to recognize a distinction within the primary sector between an upper and a lower tier. The descriptions of jobs and workers used in development of the dual labor market hypothesis are really characteristic of the lower tier alone. The upper tier of the primary sector is composed of professional and managerial jobs. Such jobs tend to be distinguished from those in the lower tier by the higher pay and status, and the greater promotion opportunities which they afford. They are also distinguished by the mobility and turnover patterns, which tend to more closely resemble those of the secondary sector except ~~but~~, in contrast to the patterns of that sector, mobility and turnover tend to be associated with advancement. Uper tier, jobs, also like those of the secondary sector, ~~are~~ distinguished by the absence of the elaborate set of work rules and formal administrative procedures which characterize lower tier employments. But the personalized relationship between worker and supervisor which substitutes for these in the secondary sector seem to be replaced by an internalized code of behavior. Formal education in the upper



✓ tier seems to be an essential requisite for employment, and educational requirements which can often be circumvented elsewhere in the economy, varying with economic conditions and easily substituted by the equivalent in informal training or experience, tend to be absolute barriers to entry. Finally, upper tier work seems to offer much greater variety and room for individual creativity and initiative, and greater economic security. These last characteristics differentiating the upper and lower tier seem to be underlying many of the complaints of middle income groups over the last several years, and the distinction between the upper and lower tier speaks to the problems of this segment of the labor force much as the dual labor market explains those of disadvantaged workers.<sup>4</sup>

The characterization of the secondary sector and the upper and lower tiers of the primary sector suggest the distinctions made in the sociological literature between the lower, working, and middle class subcultures. The labor market divisions seem quite clearly related to these subcultures and possibly are, in the same way, anchored in them. The characteristics of the subcultures vary over the life cycle of the individual; the parallel to the labor market segments is closest at the adult phase of the life cycle, the age when individuals have typically been married and have children.<sup>5</sup> The working class subculture at this stage is anchored in a stable, routinized life style. Life centers in an extended family unit and in a set of relationships in a peer group drawn from friends developed in childhood and adolescence. The individual tends to define himself and his role in terms of these relationships. Work is viewed as an instrument for obtaining the income necessary to support the family and participate in peer group activities; education is seen as an instrument for obtaining

work. In all of these respects, the subculture appears supportive of work in the lower tier of the primary sector, which seems like the basic life style to be stable and routinized. The priority accorded family life enables one to bear the lack of challenge on the job which might, were it to exist, distract from family activities.

The working class subculture contrasts with that of the middle class. Here, the line between the family, on the one hand, and work and educational activities, on the other, is blurred. The extended family obligations of the working class are narrowed to the nuclear unit, thus reducing the potential for conflict with work. Both work and education are viewed, at least ideally, as ends, rewarding in themselves, as well as a means for obtaining income. The friends with whom the family passes its leisure time are often drawn from work and based upon common professional interests. In these respects, the middle class subculture is well adapted to the support of upper tier work patterns; the nuclear family and professional friendships facilitate geographic and social mobility and permit intellectually demanding and time-consuming jobs. The view of education is supportive of extensive prework schooling far removed from the payoff and of no immediate relevance.

The lower class subculture deviates from that of the working class in a way which appears similarly adapted to the employment patterns of the secondary labor market. Lower class men have a highly personalized conception of themselves, divorced from and independent of a network of relationships with family and friends. Such relationships thus tend to be volatile, short-lived, and unstable, and their life tends to be characterized by an effort to escape routine through action and adventure. It is thus a pattern consistent with the

erratic employment of the secondary labor market as well as with other characteristics such as the personal relationship between worker and supervisor.

In sum, then, the basic labor market strata appear to reflect a threefold division between a secondary sector and a primary sector, split into an upper and a lower tier. The characteristics of work in the three divisions closely related to the sociological distinctions among the lower, working, and middle class subcultures. The bulk of this essay is devoted to an attempt to clarify the meaning of those strata and to understand the process through which they are generated. It will be argued in the next section of the paper that the strata essentially reflect differences in what are termed mobility chains and that these differences should in fact be taken as their defining characteristics.

## 2. Mobility Chains

The concept of a mobility chain represents an attempt to formalize the intuitive notion that socio-economic movement in our society is not random but tends to occur in more or less regular channels. These channels are such that any given job will tend to draw labor from a limited, and distinct number of other particular points. As a result, people hold jobs in some regular order or sequence. Such a sequence, we shall term, a mobility chain.

The points along a mobility chain may be termed stations: they generally include not only jobs but other points of social and economic significance. Thus, people in a given job will tend to be drawn from a limited range of schools, neighborhoods, and types of family backgrounds; and conversely, people leaving the same school or neighborhood will move into one of a limited set of employment situations.

The prototype of mobility chain is the type of line of progression<sup>6</sup> in blue collar manufacturing jobs. Entry into such lines is typically confined to a small number of relatively low-skilled jobs. The remaining jobs are arranged in a hierarchical sequence; each job in the sequence is filled by promotion from the job directly below it and cannot be entered directly. These lines of progression--or seniority districts, as they are more generally known--are very often negotiated with a trade union and institutionalized in collective agreements. But a close examination suggests that they are reflective of more basic forces relating one job to another, and that their existence as paths through which movement regularly occurs predates the advent of unions and often exists today in nonunion plants. Analogies to blue collar lines of progression can be found in managerial jobs in large enterprises, which also tend to fall into definite sequences which, while not quite institutionalized, tend to be customary.<sup>7</sup> Similar sequences of movement between jobs emerge even in unstructures craft markets where there are no formal institutionalized linkages between the enterprises in which the sequential jobs are found.<sup>8</sup> Casual observation suggests the existence of sequences of this kind for higher level professional careers which span enterprises. Indeed, the strong intuitive appeal of the concept appears to derive from the fact that most social scientists sense that the careers of their colleagues fall into a set of discernable paths of this kind.

Mobility chains may be identified in both a very specific, narrow sense, and on a broader typological plane. Manufacturing lines of progression are examples of specific mobility chains. In many plants, the jobs spelled out in the collective agreement could be further traced to the schools from which the labor was drawn and, through the schools, to particular neighborhoods.

Even when chains cannot be extended in this very specific way, they can at least be traced to general types of schools, neighborhoods, and family types.

The three labor market segments identified in the preceding sections may be redefined as a broad typology of mobility chains. The distinction between these segments, which was originally based upon the types of jobs and workers, thus becomes dependent upon types of job sequences through which individuals pass in the course of their work lives. This redefinition serves, I think, to clarify many of the empirical problems to which the dual labor market hypothesis gave rise since it is now clear that a particular job might lie on more than one type of mobility chain. The empirical issues should center, in other words, not on a single job, but the precedent jobs from which the individual comes and the subsequent jobs to which he gains access.

In redefining the market segments in this way, it is relatively clear that the critical distinction between the primary and the secondary sectors is that the mobility chains of the former constitute some kind of career ladder along which there is progress toward higher paying and higher status jobs. This is true in both the upper and lower tiers and constitutes the rationale for speaking of the two tiers together as the primary sectors. In the secondary sector, by contrast, jobs do not fall into any regular progression of this kind: they are held in a more or less random fashion so that a worker coming into a job may take the place of another moving to the job which he just left. These random mobility chains are rooted in the lower class families, neighborhoods, and schools. Similarly, the pre-employment stations on the upper and lower tier mobility chains would consist of working class and middle class institutions.

It is less clear at this stage of the analysis what distinguishes the job stations along the mobility chains of the two tiers. It will be argued below, however, that the important distinguishing characteristics are the extensive formal education prior to employment in the upper tier and the turnover patterns along the mobility chains in that tier, particularly the degree of geographic and social distance that those turnover patterns entail. These in turn reflect differences in the kind of traits required to perform work in the two sectors.

Several types of work are not easily encompassed within this simple typology, particularly when linked to the sociological subcultures. Perhaps the most glaring exception is **craft jobs**, which are generally thought to be held by working class types, but in terms of job stability, and variety, and, **although** perhaps less often, in terms of pay, advancement and supervision, often resemble upper tier (or middle class) jobs. A second exception are certain routine white collar jobs which nonetheless involve an important educational component such as clerical **work**. And certain jobs whose incumbents would generally be classed as middle class but which involve a degree of routine characteristic of the working class. An attempt will be made below to explain these deviant patterns.

The general typology which we have developed here also tends to be a better description of male jobs than of female jobs, and of urban, industrial employment as contrasted to rural and particularly preindustrial, labor markets. No attempt is made here to overcome these limitations.<sup>9</sup>

### 3. Productive Traits and Automatic Incidental Learning

The structure of mobility chains appears to be understandable in terms of individual worker traits and the process through which they are acquired and changed. The relevant worker traits range from very concrete skills such as the performance of specific manual motions on a machine or certain kinds of useful reasoning (such as addition and multiplication) to more amorphous behavioral traits such as the punctuality and regularity of attendance, the ability to lead others, to follow instructions, to accept supervision. Although diverse, each of these attributes appears to be encompassed by a definition of traits as behavioral patterns which will be reproduced in response to a given stimuli in a particular type of environment.

Not all traits, however, represent equivalent levels of knowledge on understanding. The behavior which is valued on the job can be produced by traits of two different kinds. The behavior may be produced as a direct response to the stimulus offered by the environment, in which case it may be termed a specific trait. Alternatively, the behavior may be derived from a rule (or set of rules) which enable the individual to deduce from the environment and the stimulus what the correct response may be, although that particular combination of circumstances may never before have been encountered. Such sets of rules may be termed general traits.

Specific traits are acquired in a process which we shall call automatic incidental learning. This is the process through which people tend to acquire a set of traits appropriate to the environment in which they are living or working automatically, simply by the fact that they are around and incidental to the activity in which they are directly engaged. The paradigm of this

process is training on the job in the process of production.<sup>10</sup> Such training is automatic in the sense that it occurs without the consciousness of the individuals involved so that it is often termed learning by osmosis. It is incidental to the activity in which the individual is directly engaged and to which the institution is devoted, i.e. production. Similar learning occurs at home where it is incidental to family life and leisure activities and in the school, where it is incidental to formal classroom instruction.

The learning process appears understandable in terms of an **amalgam** of concepts derived from learning theory, social psychology, and the process of socialization as understood by sociologists.<sup>11</sup> The productive traits themselves may be thought of as habits in the sense that that term is understood in learning theory, i.e. patterns of behavior and thought acquired through a process of reinforcement and changed by extinction. The reinforcements, however, are of several kinds. Certain of these reinforcements are very crude kinds of physical pressures and economic rewards, analogous, if not precisely equivalent, to those used in classical learning experiments such as those of Pavlov. Such pressures are inherent in any work environment although in some they are more directly linked to job performance than others. Thus, for example, the learning of efficient manual movements on a machine is frequently reinforcement by the fact that inefficient movements are awkward and physically uncomfortable. It is similarly reinforced in some plants by a piecework system which links economic reward directly to individual units of output. A second component of the learning process involves what in classical learning theory would be termed a secondary reinforcement, the tendency of imitation. Most people seem to have an acquired tendency to develop habits directly by imitating the behavior of others around them generally without conscious effort and in the absence of any



other direct reinforcement. The third component of the learning process is related to the development of social groups. Such groups tend to form in any stable situation in which the same individuals come into regular and repeated contact with each other. The members of such groups develop a common set of behavioral patterns which they tend to elevate to the position of groups norms and to treat as ethical precepts adherence to which is viewed as a matter of right and wrong. New individuals entering environments in which these groups exist then tend to adopt the norms as habits, either because group pressure is used to enforce adherence to them and that pressure operates as a reinforcement or because a tendency to conform to group norms in a new environment is itself an acquired principle of behavior which acts like imitation as a secondary reinforcement. The learning involved in imitation and conformity to groups norms creates a tendency for individual productive traits to be a function of the traits of those people with whom they have social contact and seems to underly the process which sociologists call socialization.

Given the character of the environment, the speed with which the individual adjusts to it, i.e. acquires traits appropriate to effective operation within it, depends upon the traits which he brings with him. If these traits are congruent with those required by the new environment, then obviously no adjustment is required. If the traits are in conflict, then they must be extinguished before they can be replaced and this prolongs the adjustment process. When conflicting traits are innate or very firmly rooted, adjustment cannot take place and the individual may be completely barred from entry into the environment. Adjustment may also be forestalled when

the individual must operate simultaneously in two environments requiring conflicting traits as, for example, when he holds two different kinds of work or his home environment is very different from his work environment. The work of extinction in one environment is then overcome by reinforcement in the other. To the extent that traits are acquired (rather than innate), however, and workers move through environments sequentially, the traits which an individual carries with him will depend upon the previous environments through which he has passed, and, given the character of the new environment, the sequence of past environments thus becomes the major determinant of the adjustment process.

If the learning process which we have been describing explains the development of specific traits, how are general behavioral traits generated? Basically, there would appear to be two alternatives. First, general traits may be induced from a series of specific traits. In this case, the individual learns a series of different responses to a set of similar situations, and, ultimately, comes to recognize a general principle which distinguishes these environments and leads to the proper response in new situations not previously encountered. Alternatively, the individual may learn the general rules directly through some kind of process of instruction. This is presumably the function of formal education. Education, of course, does not always serve this function. In fact it can be argued that general traits are always acquired through induction and that what school learning actually does is establish a background which facilitates induction from a relatively few specific behavioral patterns of general rules which would otherwise emerge only after exposure to a much wider range of experience. In any case, it appears that schooling is virtually never sufficient in and of itself to

develop general traits and (whether because one needs practice to develop facility in their application or because schooling, although it facilitates induction, does not substitute on it) experience on the job seems to be a critical element of training in virtually every occupation.

The importance of post-educational experience suggests one final element of learning: general rules-- or the facility to acquire them if that in what is learned in school--can decompose into a set of specific behavioral traits, if after they are learned they are not exercised. Such decomposition will occur, for example, if after he leaves school, an individual is confined to a limited range of situations, repeating the same behavioral patterns which come, so to speak, to be learned by rote, independently of the general principles from which they supposedly, and perhaps did in fact initially, derive.

It is in the distinction between general and specific traits that the basic difference between the upper and lower tiers of the primary labor market seems to lie. The traits displayed by workers in lower tier jobs tend, as a rule, to be specific. They are, in other words, habits in and of themselves. The learning process, therefore, depends upon the ability of the individual to mold himself to a specific set of surroundings in which the same behavioral patterns arise repeatedly. It is for this reason that lower tier jobs place a premium upon stability and routine, and work tends to be repetitious, lacking inherent interest and generally failing to command the conscious attention of the worker. It is for this reason too that formal education is relatively unimportant in such jobs and formal education requirements are frequently circumvented.

In the upper tier, productive traits tend, by contrast, to be deduced

from a set of general principles, and mobility chains are constructed, in like contrast, so as to produce these principles and develop facility in their application. This accounts for the role of formal education in upper tier mobility chains. It implies that the relatively high mobility in the upper tier serves the function of exercising the general principles learned in school and preventing their decomposition into specific traits.

Craft mobility chains may be understood in these terms as a variant of the lower tier mobility chain. What distinguishes a craft job from other working class jobs in the United States (in Europe the term craft is used somewhat differently) is the number of specific tasks which a craftsman, as compared for example to a production worker, has mastered. As these tasks accumulate, a certain number of craftsmen induce general principles from them, and many of these people go on--especially in the construction trades, but also in such trades as machinists, tool and dye making, cooks, chefs, etc.--to become supervisors, independent entrepreneurs, designers, and inventors.<sup>12</sup> This accounts for the fact that craft mobility chains tend to lead into those jobs which are typically thought of as middle class. On the other hand, the crafts tend to be working class in that the basic learning process is specific: formal education, even when it becomes important, invariably tends to accompany on-the-job training rather than, as in most middle class careers, preceding it. While it is clear from any contact with the trades that certain craftsmen are working from a set of general precepts, it is also clear that for many other craftsmen, the skills will never amount to more than an array, however, vast, of specific traits. The particular approach to knowledge as well as the character of associations on the job and in leisure home activities for even those craftsmen who do develop general

skills explains why, although the income and status of their position is often equivalent to the middle class, they tend to remain working class in attitude and outlook.

The other important deviation consists of workers who are middle class in background and outlook but whose careers exhibit very little of the mobility characteristic of the upper tier and whose work tends to be uninteresting and routine. They may be interpreted as people who began in upper tier type mobility chains but whose general skills decomposed into a set of specific traits because they were applied in only a limited number of tasks. It is not possible to identify this phenomenon with a single type of career or occupation recognized in common parlance as one can in the case of the craft pattern. A number of bureaucratic careers in the civil service do seem to follow this model. In other cases, however, the careers in which this is involved tend to be ideosyncratic; certain individuals get blocked at some point and remain behind in a job which for them becomes increasingly routine, while others, moving through a similar set of stations early in their careers', rise to higher position which involve a greater variety of work. The difference may be due in some cases to distinctive characteristics of individuals: in the other cases, it may be simply a matter of chance that an individual, because of an unusual period of stability in an otherwise variable work load or some peculiarity in opportunities for promotion (a sudden dearth of vacancies or unusually stiff competition) remains so long with a set of tasks that his general skills decompose.

This last pattern, which we are explaining as a deviation from the dominant upper tier pattern by decomposition, is to be distinguished from a number of white collar career paths which involve essentially repetitive work, such as lower level clerical and sales jobs. These, I would argue, only appear upper tier because of the association of the latter with the middle class, and the tendency to draw a parallel between the middle and the working classes, on the one hand, and white collar and blue collar jobs on the other. Because the work is basically repetitive and the traits required specifically learned, the jobs belong essentially to the lower tier. If the typology developed here fails to contain them, it is due less to its epistemological foundations than to the fact that it is designed largely to explain male careers and fails to adequately characterize the careers of women, who dominate many of these employments.

## Part II. The Construction of Mobility Chains

From the point of view of social policy, the critical issue, of course, is not simply that mobility chains exist and can be distinguished in these ways, but why they are constructed as they are and how they can be changed. The answers to these questions lie in a further examination of the process of "automatic, incidental learning". That process is not simply one of learning but, more fundamentally, one of adjustment between the individual and any new environment which he enters. It implies that, through physical reinforcements, imitation and conformity, an individual entering a new environment will eventually be molded to it, subject only to the constraints imposed by his innate characteristics and by other environments in which he must operate simultaneously and which, therefore, interfere with the extinction of antagonistic traits. Understood in these terms as a process of adjustment, it is

clear that it is not peculiar to movement between jobs along lower tier mobility chains where specific productive traits are developed. A similar adjustment between the individual and the new jobs which he enters must occur in upper tier mobility chains when there is a disparity between the traits required by the work environment and those carried by the individual and in the secondary sector. It also occurs in movement between nonwork environments: in moving from the family to the school, between schools, and from school into a first job.

The process of adjustment, however, is one which carries costs, both to the individual and to the institution in which it occurs. The costs to the individual arise because learning depends upon the reinforcement through the administration of pleasure and pain. The cost to the institution is generated by the tendency of the individual to disrupt the environment in which he is operating until he has accommodated to it.

This suggests that the construction of mobility chains can be cast as a conventional problem of cost minimization: jobs, (or, more broadly, stations) are formed into chains, it implies, so as to minimize the amount of adjustment involved in movement from one station to another. To complete the theory alongs these lines, one would want to translate the concept of "adjustment" into monetary costs (or, possibly, opportunity costs) and recognize that certain wage differentials could compensate for excessive adjustment costs. Thus a chain might be formed involving an adjustment process more costly than some other alternative if the differentials in the wage bills of the two alternatives were greater than the added cost. But, basically, this approach leads one to imagine an economy tending toward a steady state in which

jobs form into a set of least cost chains along which the requisite supply of labor is generated and disturbances which strain the ability to supply required labor through the original channels initiates a search for some new set of least cost alternatives. In any subsector of the economy,--or any particular job--the other jobs in the economy would form same rank order according to the cost of mobility from them into the job in question, and as demand increased, progressively, these jobs would be tapped in succession.

The difficulty with this approach is that it ignores several facets of automatic incidental learning which suggest that the cost of movement between two jobs will decline rapidly toward zero with the amount of movement which takes place and the period of time over which it has occurred. Under these circumstances, the savings to be had from adjusting to an increase in demand in a "least cost" fashion may be quite small and ephemeral; the pressures to do so would be correspondingly reduced, and if, as seems likely, the various alternatives are not readily apparent and can be discovered only through an extensive search process which itself carries costs, quickly eliminated. The door is then open for a variety of other factors to determine the evolution of mobility chains. And a theory of mobility is at least obliged to identify the circumstances under which other factors are likely to dominate. Ideally it would specify these other factors as well. For these purposes, the properties of the learning process which lead the cost of mobility to decline with movement must be specified. These are basically as follows:

First, the dependence of learning on imitation and conformity makes it possible to construct mobility chains along which learning proceeds movement. This will occur if there is contact between people at successive stations



along a mobility chain. People of one station can then be introduced to the skills and behavioral traits required for the next station before they actually make the move and before these traits can have any effect one way or another on the efficiency of the productive process. In the extreme, a person will be able to absorb all of the traits required to perform the next job in a mobility chain before he moves into it. But even where he can not absorb all the traits, such prior exposure tends to reduce the cost of adjustment. To the extent that the prior learning depends upon some underlying tendency to imitate and conform (rather than the direct administration of physical and psychological reinforcements), it is not only costless to the institutions in which it occurs but also painless to the individual involved.

Certain jobs fall naturally into this relationship where prior learning occurs. The apprentice learns from the journeyman in this way in construction: the stockboy learns from the stock clerk in a shoe factory. In the academy the Ph.D candidate learns to teach as a student in the classroom. But, for the evolution of mobility chains, the critical point is that some of the contracts upon which this prior learning depends are generated by the mobility process itself. Thus, for example, in schools, graduates often come back to teach at their own high schools, and this tends to reinforce a channel of mobility between certain high schools and certain colleges as students in high school acquire the specific training and broader norms which their teachers bring from college. As more of the high school teachers are drawn from a given college, the amount of adjustment which their students must go through to accommodate to college life declines.

Back flows of this particular type are probably relatively rare but there is one kind of backflow which occurs regularly: that between the work environment and the home environment. This implies that when a new flow of labor between, for example, a job and a neighborhood is opened up, the opportunity for prior learning is created for other people in that neighborhood. The cost of adjustment for the children and friends of the first movers should be less than the initial cost of movement, and, to this extent, any pattern of movement, once initiated, will tend to be self-perpetrating and reenforcing. To this extent also the opportunities of whole groups of people are at stake when a new source of labor is opened up.

As we have used the concept, environments, to the extent that they are composed of people, are essentially defined by the characteristics of the individuals within them. Thus, the general principle at stake in the existence of regular backflows is a tendency for the donor environment to evolve toward the recipient environment as movement between them occurs. There is a corresponding tendency for the recipient environment to evolve toward the donor. Such a tendency is implicit in the postulate of imitation as a basic behavioral characteristic of individuals. Thus, just as new individuals will tend to adopt the behavioral traits of older workers by imitating their behavior, there will be a tendency for older workers to adopt the behavioral traits of new workers in the same way. When the number of new entrants is small in relation to the body of experienced workers,

the effect of the former upon the latter is likely to be trivial. But when the number of new entrants becomes relatively large, their effect upon other workers begins to be important, and the burden of adjustment will no longer be born solely by the entering individuals. Since the traits of the entering individuals reflect the characteristics of the environment from which they come, any tendency of the receiving environment to move toward the traits of new entrants implies a tendency for it to move toward the donor environment as well.

In sum, then, the movers tend to mediate between the donor environment and the receiving environment and, in the process of doing so, bring the characteristics of the two environments closer to each other. The process is in many ways analogous to the mutual attraction exerted by two bodies of matter. As movement of individuals occurs between them, they should move toward each other and, eventually, collide or mejor dicho, merge. The distance which each environment moves, moreover, should be a function of their relative sizes. This follows from the fact that, for any given amount of movement, the influence of the movers upon others in the environment should be proportionate to their numbers relative to the total population. The amount of change which occurs in the two environments will, of course, be a function of a number of other variables as well. Perhaps most importantly, it will depend upon the constraints, economic, technical and social, upon each of the environments involved. These specific constraints are examined in the next part of this paper. Before turning to this, however, two, more general points about constrained evolution may be made.

The first relates to the way in which extraneous characteristics, or traits, become barriers to movement. The basic argument is that when two environments consistently interchange people, the characteristics required to operate effectively within them will tend to evolve toward each other. In the case of job environments, however, one would expect the evolution to be constrained, and the tendency thwarted when those characteristics are economically disfunctional. Job environments are after all located in economic institutions which permit such adjustments to proceed unrestrained only at the risk of their own demise. On the other hand, when the characteristics are economically irrelevant, or when their economic relevance is obscure, one would expect the evolution to proceed unrestricted. Thus, when there are regular flows of labor between two environments, all sorts of extraneous relationships between the donor and receiver are likely to grow up which, while they have nothing to do with the initiation of the flow, will act as a barrier to the entry of outsiders. An example is language: In much production work, it does not matter what language is spoken: it may not even be necessary that a single language be spoken. But if the work place starts to draw workers all of whom speak the same language, language will eventually come to constitute a barrier to entry.

The existence of this phenomenon is particularly important in understanding how formal educations and schooling affects mobility patterns. An educational environment is supposed to develop a set of traits in the people who pass through it which have a particular economic function. We have argued that it does in fact do so for upper tier primary jobs: that for the

lower tier primary jobs, its role in this regard is largely a myth. But, in addition to the functional traits, schools tend to develop a set of other traits which are of no particular functional importance. That is to say, at least initially, these traits do not affect the efficiency with which work is done. If all, or virtually all, the people moving into a given work environment pass through the schools and acquire these traits, however, then, because environments tend to evolve toward each other, the economically irrelevant traits will tend to be incorporated in the work environment. When this occurs, the school does become a prerequisite for entry into the work environment. If this is what has occurred for lower tier primary jobs in the United States--and I think a good case could be made that it has--then one's attitude toward educational policy and job requirements becomes a good deal more complex than that suggested by our characterization of lower tier mobility chains as involving learning of specific traits on the job. In particular, it suggests that in attempting to change patterns of mobility, formal education cannot be treated as simply a screening or rationing device, however, valid that view of formal education may be in understanding the origins of existing mobility patterns.

A similar point may be made in relation to the role of education in upper tier chains where we have argued it performs a critical function. The tendency for environments to evolve toward each other, by incorporating whatever traits are carried by the people who pass through them, suggests that the informal learning which occurs in the schools, and the on the job learning which occurs along upper tier chains after school, may eventually

come to constitute as real a barrier to movement as the formal education which explains the original construction of these chains.

A second point which emerges from consideration of the process through which environments evolve toward each other has to do with the way in which mobility chains are constructed and changed. A basic problem for policy is the attempt to gain access to the initial station on a mobility chain for a new group of workers. This is essentially what we have been trying to do for "disadvantaged" workers: it is a process which has operated historically as the vehicle for social mobility of immigrants from abroad. It may be described as an attempt to attach a new station to the bottom of an existing mobility chain. If successful, it leads to a process whereby the initial station on the old mobility chain and the new station which is being attached to it evolve toward each other. Thus, in the case of black workers from the ghetto gaining access to white jobs, one hopes that the initial group of blacks placed in those jobs will set off a process through which the ghetto environment becomes better suited to the development of productive traits prior to employment and, by the same token, the work environment becomes better adapted to the traits of ghetto workers.

In this process of evolution, however, the higher stations on the mobility must act as a constraint upon the evolution of the initial station toward the new source of labor. If they do not act as an effective constraints and the initial station evolves freely, a point may be reached when that station becomes so different from the subsequent stations on the chain that it is effectively detached from the chain, and entry begins to occur at the

second station rather than the first. This is what seems to have happened with a number of jobs newly opened to blacks in the last decade: it appeared that people were gaining access to the initial station on a mobility chain in the primary market but the end result was that the station adapted the characteristics of the secondary jobs from which the new workers had come and was simply detached from the mobility chain.

Something of the same thing may have occurred historically as the working class has attempted to use education to gain access to upper tier primary jobs. So long as the schools are dominated by students drawn from middle class backgrounds, and the number of working class students is small, then the latter are forced to adapt, or, more exactly, socialize, to the middle class view of education and the educational process, a view which as we have seen is supportive of the function which education performs in upper tier mobility chains. Thus, there is some relatively small number of working class students who can use a given school as a vehicle for social mobility. When large numbers of such students attempt to do so, however, as has historically been the case in the United States, then they swamp the educational environment and impose their own values and norms upon it. These norms are not, as we have seen, conducive to upper tier jobs; they lead to schools which emphasize rigid disciplinary rules, and specific, functional knowledge in the same way that these things are emphasized in lower tier jobs. The process is, in other words, very much the same as that which occurs in the attempt at black mobility: the environment which once served as an initial station on mobility chain (in this case the schools), evolves so far toward

the environment from which it is drawing a new source of entrants, (working class families) that it becomes detached from the original mobility chains (leading to professional and managerial jobs).

Part III The Underlying Determinants of Mobility Chains: Technology and Social Class.

The considerations of the preceding section, while useful in assessing certain aspects of public policy in the last ten years, shed little light in and of themselves upon the underlying determinants of existing mobility chains and, in particular, upon the question of what generates the basic segments into which the labor market appears to divide. It is not possible to provide a definitive answer to this question, but the logic of the problem and a variety of scattered pieces of evidence drawn from sociological studies and the labor market research of my own and others suggests the following series of hypothesis about technology and class subcultures. These hypothesis may be developed in terms of the traditional problem of adjustments in the demand for and supply of different types of workers. Suppose, in other words, that there is a structural imbalance in the labor market: that, while the total number of workers is equal to the total number of jobs, the composition of the two does not match: certain types of workers are in excess supply while there is any excess demand for other types. How is balance then restored? Does the composition of the labor force shift or does demand adjust so that the types of workers in excess supply can be employed in the available jobs? In our terms, there are basically three types of workers



which should be recognized for this exercise: workers to fill jobs in the secondary sector, in the lower tier of the primary sector, and in the upper tier of the primary sector. The supply for these types of labor is rooted in class subcultures: the demand in the technology. Each may be examined separately.

### 1. The Technology

Conventional theory suggests that adjustment in the demand for labor may be basically of two kinds: the first of these is a shift in the composition of the demand for the final product which, unless all products use different types of labor in the same proportions, will result in shifts in the composition of labor demand. The second kind of adjustment is a change in the techniques utilized to produce a given final output. The speed with which these adjustments occur should be influenced by the extent to which the techniques of production and the composition of final output are frozen in fixed capital equipment which acts to inhibit change. These adjustments are generally thought to be triggered by changes in relative prices and wages, and any constraints upon their rate of change will also act to inhibit adjustment.

My own studies of the border line between the primary and secondary markets suggests that this conventional picture leaves out an important dimension of the technology, particularly as it relates to the segments of the labor market with which we have been concerned. Most industries appear to be operating as if they consistently faced a choice between two different

techniques of production.<sup>14</sup> One of these techniques, reminiscent of Adam Smith's pin factory, breaks the work down into a series of highly specialized, individual tasks: the tasks are then assigned singly to workers who perform them, frequently with considerable mechanical aid. As a result, this technique tends to involve a relatively large complement of capital equipment. The production and maintenance jobs which this technique generates lend themselves to incorporation into the kind of mobility chains and specific learning processes which characterize the lower tier of the primary sector, although a complement of professional and managerial personnel drawn from the upper tier is required and the bottom stations on the lower tier chains can be detached and assigned to workers drawn from the secondary labor market.

The alternative technique is one which utilizes a much more general set of skills: work is less finely divided into a set of individual, carefully defined tasks, and considerably less capital equipment is employed in production. The jobs generated by this technology tend on the whole to be either quite unskilled involving menial work and obvious but nonroutine judgment, or, alternatively, the jobs require highly trained craftsmen and generally trained professionals. There are very few intermediate positions. As a result, the jobs do not lend themselves to construction of career ladders, and employment tends to bifurcate into two groups: workers drawn from the secondary sector holding the unskilled jobs and another group drawn from the crafts at the top of the lower tier or professionals drawn from the upper tier.

The choice between these two techniques appears to be dominated by three variables: the degree of standardization of product demand; the stability of

that demand; and its certainty. The specialized, capital intensive technique lends itself to production for a standardized market where demand is either stable or, if it fluctuates, does so in a predictable manner and within sufficiently narrow limits that the fluctuations can be met through inventory changes without interrupting production. Under these circumstances, both the capital and labor involved in production remain fully employed. When, on the other hand, there are wide or unpredictable fluctuations, the capital investment required by the first technique is deterred. It is also difficult to specialize the labor force, and, the employment of people who can transfer to other activities when output declines is promoted. Hence, the reliance upon craftsmen, the secondary sector, or the upper tier, all of whom possess the characteristic of transferability. Variability in the nature of the product acts like variability in final demand to favor general, as opposed to specifically or narrowly, trained labor for reasons which are fairly obvious. It is less obvious why the lack of a standardized product should deter fixed capital investment, but this does seem to be the case.

Most industries seem to use the two techniques simultaneously and although they are sometimes found only in different firms, or, at least plants of the same firm, they can often be found operating side by side in the same plant. This is because, even when the degree of standardization, stability and predictability necessary to justify the specific technique are generally met, there tend to be variations above the stable base of demand which are sufficiently random so that the investment required to meet them through the specific technique is not justified. Conversely, even when the bulk of demand is so unpredictable that only the employment of highly mobile factors of

production can be justified, there is generally some minimal level of demand which is sustainable and which it pays to meet through specialized production. Industries organize differently to meet these two components of demand. In some industries, certain firms will pick out the stable portion and refuse to increase production above that level. Their customers must, therefore, wait in line and, when the line gets long, they are drawn off by other firms who utilize the more general, less intensive technology. Components of the machine and tool and dye industry seem to work in this way. In other industries, a single firm will meet both the fluctuating and the variable portions of demand, and the two techniques can be seen operating simultaneously side by side. One large paint brush manufacturer which I recently visited exemplified the second case.

Industries also divide between the two techniques according to the degree of standardization of the product, again sometimes by firms and other times within the same firm. Thus, for example, in the garment industry there is a division between the low priced market which produces long runs of standard items, (and within that certain segments like the work cloth segment, where there is little variation in output from year to year) and the high priced, high fashion segment where these runs are short and fashions change extremely rapidly. The restaurant industry, to take another example, divides between a standard segment, running from sandwich shops at the bottom of the price range to steak houses at the top, and a variable segment composed of haute cuisine and, to a lesser extent, banquets and catering.

A final point which seems important in understanding the relationship between the techniques is that, although the two techniques operate simultaneously, there also appears to be an important process in time whereby

the specific technique evolves out of the general technique. What seems to occur is something like the following: when a previously variable output stabilizes, the workers associated with its production find themselves spending full time at what was initially thought to be a temporary assignment. Those workers who stay under these circumstances find their general skills degenerating into a set of specific traits. Many generally trained workers refuse, for this reason, to remain, and their departure forces management to find replacements, often through internal promotion, which the stabilization of demand permits. Once the internal promotion channels are opened, it becomes possible to attract and hold workers in unskilled entry positions, and, in this way, the unskilled jobs are transferred from the secondary to the primary market. It is this kind of evolutionary process through which the types of labor change.

A similar but in some ways more important evolution occurs in the technology. Once production stabilizes, a whole set of technological changes begin to take place. When the product is similar to that produced elsewhere, the new technology can be "borrowed" and these changes involve an explicit decision to introduce equipment already in operation elsewhere. When the product is unique, and such borrowing cannot occur, the process is similar but less dramatic. Once people are working continually at the same thing, different tasks begin to be separated out and distinguished. This facilitates the development of mechanical substitutes for human actions through a series of changes which are individually often no more than minor modifications in existing equipment. The fact that the technology is specialized and the operations separately identified, in other words, apparently enables people to perceive the opportunities for improvement in a new way. In sum, then,

what occurs is a gradual evolution of the specialized technology from the general technology over time. The evolution is an intellectual process which must then have an inherent dynamic, or pacing system of its own. The speed with which it occurs can probably be increased by economic pressures but only within limits. In looking at a cross-section of industries, therefore, one would expect that the intensity of jobs which lend themselves to lower tier mobility chains relative to those in the upper tier and the secondary sector, would be a function not only of the stability and certainty of demand at any moment of time, but also of the length of time which demand had been possessed these characteristics.

Together, what these points about the technology suggest is that, for the adjustment of demand to the composition of supply, the critical variables are the standardization, stability, and certainty of demand for the product. Changes in this direction generally in the economy as a whole, or through changes in the composition of product demand, will favor jobs which lend themselves to incorporation in lower tier mobility chains. Because such chains tend to involve fixed capital investment, however, there will be a certain irreversibility in the process. It is easier for the economy to move toward lower tier mobility chains than away from them.

## 2. The Supply of Labor: Class Subcultures

The class subcultures are such that secondary jobs can be filled by labor drawn from the lower class, or by working and middle class youth. The latter pass through a period of adventure and action-seeking in adolescence and early adulthood before settling down into the routine family life, stable employment, and in the case of the middle class, professional career training.

During this period they have many of the characteristics as employees of lower class workers: they are not seeking and could not sustain a commitment to a career ladder. Employees seeking career workers will not hire them. They are thus forced, if they are to work at all, to accept the types of work available in the secondary sector, and, within the limit of certain social and geographic restrictions, these youth tend to share many of the employments of the secondary sector with lower class adults. The fact that they do is one of the additional humiliations of lower class status in American society. In any case, to the extent that these youth are a significant segment of the secondary sector, their number constitutes one of the major constraints upon the supply of labor for secondary work.

The other constraint is the number of people emerging from the lower class. There is no want of theories to explain the lower class subculture.<sup>16</sup> To examine them here would constitute a considerable digression. Instead, we put forth a single hypothesis: that lower class subculture is most fruitfully viewed as a degeneration of the subculture of the working class and that the process of degeneration is closely linked to that of migration.

This hypothesis is suggested by the fact that the fundamental difference between the two subcultures emerges only in adulthood: in adolescence, the life style of the working and lower classes are very similar. The lower class pattern, thus, appears to be a carry-over into adulthood of a mode of behavior which, among the working class, is confined to adolescence. This implies that the roots of lower class culture are to be found in an examination of the process of transition from adolescence to adulthood which occurs among the working class.

That transition appears to be characterized by three basic elements:

- 1) Family formation, (getting married and having children).
- 2) The stabilization of employment patterns, and
- 3) The transition in the character of peer group activities. This last seems to be a particularly important element both in supporting the adolescent life style and its abandonment. The peer group tends to be composed of friends acquired in the school or neighborhood and carried throughout life. These friends engage together in the adventures of adolescence. Most of them then marry, have children, and obtain stable employment at about the same time, and the fact that they do changes the whole character of the activities in which the group engages and the norms which it establishes and to which its members adhere. Thus, the peer groups tend to support and encourage the transition out of adolescence.

If the working class transition is characterized in this way, the failure to complete it, which seems to typify the lower class, might be traced to any one of the components: a lack of stable employment, a failure to form a family, or the lack of a supportive peer group.

The process of migration through which the American labor supply traditionally has been fed is disruptive to all three of these factors. Migrants have generally come from rural agriculture communities in Europe, Latin America, or especially recently, the black south. These communities are composed of a network of extended family and peer group relationships not unlike those which characterize the urban working class and to which the subculture of the latter is sometimes traced. Most migrants leave home, however, at more or less the time when they would be passing through adolescence



and into adulthood. In migrating, they leave behind their childhood peer group and thus lose whatever supporting role that group might play in the transition: they often leave behind as well (at least temporarily) a wife and young children, thus tending to attenuate the influence of family formation upon the stabilization of life styles; sometimes (although after a migration stream is started and there are relatives at the destination, this is less important), the extended family network in which working class activity--and presumably a considerable amount of the social pressure to settle down--is located is lost. Finally, the process of migration and reorientation at the destination reduces the opportunities for stable employment.

At the destination, migrant communities seem to be accompanied by considerable amount of flux, which prevents the development of stable relationships and reduces the prospect for a successful transition even for the children born in the cities. People are forever moving around from one neighborhood to another as new members of the family arrive and living accommodations have to be expanded. Children are frequently sent home to be cared for by grandparents during periods of economic hardship. Particularly for blacks and Puerto Ricans and especially with the reduced cost of transportation of recent years, whole families may return home for extended visits, for vacation, or in cases of emergency, in search of employment, and the like. This continual flux inevitably undermines the transition to the stable routine life style of the working class for those who are themselves engaged in it. But it probably also constitutes a threat to the transition of those who are not themselves directly involved for it disrupts peer group relationships for those who remain in the neighborhood quite as effectively

as it does for those who move in and out. Since employers tend to judge people in terms of the characteristics dominant among the ethnic groups to which they are attached, membership in an ethnic group which, because of the amount of reverse migration, has a reputation for job turnover increases the difficulty of finding acceptance in stable employment.

The American experience with immigrants has been one in which the society is fed by a series of waves of migrants from different origins with cultural, racial and linguistic barriers separating them from each other. It seems likely, therefore, that part of what appears to be an assimilation or acculturation process is actually related to a cycle of stabilization. In the early stages of any new migration, the ethnic community is dominated by the flux of migration, and this flux prevents the adult transition to a routine life cycle. As the community ages, there begins to develop a second generation of people, some of whom are rooted in the neighborhood with an extended family network growing up around them, but so long as this group is small relative to the population of more recent migrants, the latter tend to determine the character of the community in such a way as to minimize the prospects for a successful adult transition. Eventually, however, the number of people rooted in the destination becomes so large relative to the inflow of new migrants that they begin to dominate the atmosphere of the ethnic community, whose members then start to move in significant numbers from a lower to a working class subculture. In the United States, the transition has been hastened by the fact that changes in immigration laws and events in the home country have often acted to cut off the flow of new migrants and reduce the possibilities for returning home.

The basic hypothesis then is that the size of the lower class and hence the supply of workers to fill secondary jobs is a function of the rate of in-migration of ethnic and racial groups, and the size of the stock of second and third generation members of these groups relative to the in-flow of new members. As the new migrant stream declines, both absolutely and relative to the second and third generation, there should be a decline in the supply of workers for secondary jobs and an increase of the supply of workers for jobs in the lower tier of the primary market. Finally, because of the sensitivity of the transition to a routine life style to the availability of stable work and the interaction among individuals through the peer group, it is likely that, given the rate of in-flow of new migrants and the relative size of older members of the community, the rate at which the community generates primary workers is also directly influenced by the availability of primary jobs.

In sum, then, the basic hypothesis is that the lower class subculture is a degeneration of the working class pattern in which people fail to make a transition into a routine life style pattern as adults; that the transition is associated with family formation and with the availability of stable jobs not only to the individual but to enough other members of his peer groups so that groups' norms change in such a way as to support the changes in the individual life style; that the process of migration and the presence of large numbers of recent migrants in the community is disruptive of the transition because it inhibits family formation, peer group development, and maintenance of stable employment; and, thus, that the migrant process is a major determinant of the relative numbers of the lower and working classes.

### 3. The Adjustment Process

It should now be possible to bring the preceding analysis of demand and supply together into an overall picture of the adjustment process. The basic hypothesis is essentially as follows: that the underlying determinant of the division into different types of mobility chains is the structure of technology. This dictates a core of jobs which lend themselves to the building of lower tier mobility chains. The jobs at the bottom of these mobility chains can, but need not, be detached and formed into a secondary sector. The technology which generates these core jobs also has a much smaller complement of work, which lends itself to upper tier mobility chains. Around this core is a second technology, associated with the uncertainty and instability of demand, which generates a job structure which does not lend itself to lower tier mobility chains, but instead to secondary jobs and upper tier mobility chains. Thus, in terms of adjustment, the technology permits variation along two dimensions: 1) the distribution of demand between the core and the periphery and 2) the attachment or detachment of jobs in the core at the bottom of the lower tier chains. There is possibly a third dimension in that certain jobs may be built into either lower or upper tier chains depending upon whether the rules of hiring and tenure in those jobs force sufficient movement to prevent a set of general traits from deteriorating into specific applications of them. Finally, to the extent that different products generate different proportions of the job types, adjustment can also be affected by changes in the composition of final demand.

The supply side of the market consists of a series of individuals coming out of lower class, working class, and middle class institutions. What we

have argued in the text is that youth from all three backgrounds are adapted essentially to secondary work, and the number of youth in the labor force constitutes one determinant of the supply of secondary workers. As these groups age, the middle class flows tend to move into the upper tier, and the working class into the lower tier, leaving the lower class in the secondary market. A central hypothesis of the analysis, however, is that the lower class adult life style is essentially a degeneration of the working class style. That deterioration is a complex function of several variables. But one of these variables is the availability of stable employments to youth at the point of transition to adulthood. Lower class workers at this stage of their life are particularly adjustable to one or the other kinds of job structures depending upon what kind of work is available. The other important determinant of the degeneration is the process of migration. The lower class subculture is a product of the early stages of a migration such that as a given migration stream ages and the proportion of recent migrants declines, a working class subculture in the racial and ethnic group involved in the migration is restored. The rate at which this process proceeds should then be a function of the relative availability of primary and secondary jobs. If there is an excess demand for secondary workers, new migration should be encouraged or the stabilization of older migrant communities retarded, or both. If there is an excess supply of secondary workers, then, conversely, the stabilization of older migrant communities should be hastened and new migration retarded.

It would be nice to understand adjustments in the upper tier of the primary market in a similar clear-cut manner. Certain postulates about these jobs can be deduced, but I feel less confident about their validity.

One postulate is that bottlenecks in the upper tier will lead to an increase in the size of the core economy through standardization and mechanization. The assumption is that although the core economy requires a complement of upper tier workers, the input of such workers per unit of output is less than on the periphery. A second postulate is that the spread of higher education has created a permanent excess supply of upper tier workers, at least within wide limits, and a variation in demand results in variations in the rate of promotion (or mobility) and, hence, in the relative number of potential upper tier workers whose general knowledge decomposes through lack of exercise into specific behavioral traits. The most general postulate is that both factors are operative: there is a potential supply of upper tier workers created by the output of the educational system. If supply exceeds demand, a part of that supply simply falls back into, in effect, the lower tier. If demand exceeds supply, the adjustment comes through the distribution of work between the core and the periphery.

Thus, in sum, adjustment can take place on either the demand or the supply side of the market. On the demand side, it will have to occur through changes in the distribution of output between the periphery and the core, or through changes in the composition of final demand. It can also occur by detaching jobs at the bottom and top of lower tier mobility chains, filling the former with secondary workers and moving the latter to the upper tier through systematic rotation of labor. On the supply side, the main avenue of adjustment between secondary and primary workers is the rate at which new migrant communities can be expanded by speeding the former and retarding the latter. The supply of upper tier workers depends heavily upon the output

of the school system, and this appears to introduce a certain assymetry of responses. It is difficult to expand supply beyond the upper bound which that output imposes but an excess supply will simply fall into the lower tier through specific employments which that sector has to offer. This, it will be noted, is not a theory which says anything about a price system, and to introduce it here would require a much expanded format. It should be pointed out, however, that certain of the adjustment mechanisms could be triggered by price changes while others would operate effectively without a price trigger.

1. Michael J. Piore "On-The-Job Training in a Dual Labor Market" in Arnold Weber et al, Public Private Manpower Polices. (Industrial Relations Research Association, Madison, Wisconsin, 1969); "Jobs and Training" in Sameul Beer and Richard Barringer The State and The Poor (Winthrop Publishers Inc.: Cambridge, 1970) and Peter B. Doeringer and Michael J. Piore Internal Labor Markets and Manpower Analysis (D.C. Heath; Lexington, Mass., 1971), Chapt. 8: See, more generally, David M. Gordon Economic Theories of Poverty and Unemployment mimeo, Manual Bureau of Economic Research, January, 1971.
2. There is nonetheless a certain amount of evidence bearing upon this hypothesis. Certainly the most ingeneous of which is David Gordon, Class, Productivity, and Class. A Study of Labor Market Stratification. (Unpublished docteral dissertation, Harvard University, May, 1971). Among the other work that has direct bearing, see also, Robert E. Hall "Prospects for Shifting The Phillips Curve" Brookings Papers or Economic Activity. No.3, 1971 pp.659-702.  
  
Arthur J. Alexander "Income, Experience and The Structure of Internal Labor Markets" Rand Corporation, 1971; and Bennett Harrison Education, Training, and The Urban Ghetto (Unpublished Ph.D. dissertation, University of Pennsylvania, 1970).
3. See, particularly, Piore "On-The-Job-Training in a Dual Labor Market". op. cit.
4. Michael J. Piore Upward Mobility. Job Monotory and Labor Market Structure M.I.T. Working Paper No. 90, September, 1972.



5. The following on class subcultures draws heavily upon Herbert J. Grans The Urban Villagers (The Free Press: New York, 1962) Chapt. 11, My understanding of lower class subculture and its relationship to the labor market has also been much shaped by Elliot Liebow Tally's Lornor (Boston: Little Brown, 1967).
6. See Doeringer and Piore Internal Labor Markets---op. cit. Chapt. 3.
7. See, for example, Theodore Alfred "Checkers or Choice in Manpower Management" Harvard Business Review vol. XIV no. 1 (Jan-Feb., 1967) pp. 151-169. Edith T. Penrose The Theory of Growth of The Firm (New York: (Weley and Son, 1959), and William H. Whyte The Organization Man (Doubleday Anchor Books, New York, 1956).
8. David P. Taylor and Michael J. Piore "Federal Training Programs for Dispersed Employment Occupations" in Stanley Jacks, (ed), Issue in Labor Policy. Papers in Honor of Douglass Vincent Brown (M.I.T. Press: Cambridge, 1971).
9. I think that these limitations can be overcome, particularly those relating to female employment, by reference to the differences between male and female rolls in various subcultures but it seemed that to try and do so in this essay would take us too far afield.
10. See, Peter B. Doeringer and Michael J. Piore "Labor Market Adjustment and Internal Training" Proceedings of The 18th Annual Meeting Industrial Relations Research Association, New York, Dec., 1966 pp. 250-263; and Michael J. Piore "On-The-Job Training and Adjustment to Technological Change" The Journal of Human Resources vol. III no.4 (Fall, 1968) pp. 435-449.

11. The following summary draws heavily upon George A. Kimble Hilgard and Marquis' Conditioning and Learning (New York; Appleton-Century-Crafts, 1961); Neal E. Miller and John Dollard Social Learning and Imitation (New Haven, Yale University Press, 1941): and Alexander P. Hore. Handbook of Small Group Research (New York: Free Press of Glen Co., 1962).
12. See Taylor and Piore, op. cit.
13. Some large organizations deliberately maintain pyramidal promotion ladders--and the civil service is perhaps a special case of this--but the shape of these ladders does not explain why some individuals, when passed over for promotion, remain in the organization while others leave to find jobs which will exercise their range of general skills.
14. Cf. Robert T. Averitt The Dual Economy (Morton and Co; New York, 1968). Averitts distinction between the center and the periphery corresponds very closely to that between the two technologies developed here. He is primarily concerned with industrial organization but it is easy to see why the differences in labor utilization should be related to that organizational differences which he describes.
15. The following draws heavily upon a study of the labor market for recent migrants in Boston in which I am presently engaged. It is also influenced by Gans, op. cit. See, in addition, Jeffery Piker Entry into The Labor Force (Institute of Labor and Industrial Relations. University of Michigan-Wayne State, December, 1968), and Eugene B. Brody (editor) Behavior in New Environments (Sage Publications. Beverly Hills, 1969).
16. Charles A. Valentine Culture and Poverty (The University of Chicago Press; Chicago, 1968).







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